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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,321	12/03/2001	Thomas Honger Callisen	10096.200-US	9485
25908 7590 06/20/2007 NOVOZYMES NORTH AMERICA, INC. 500 FIFTH AVENUE SUITE 1600 NEW YORK, NY 10110			EXAMINER KISHORE, GOLLAMUDI S	
			ART UNIT 1615	PAPER NUMBER
			MAIL DATE 06/20/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/005,321	Applicant(s) CALLISEN, THOMAS HONGER	
	Examiner Gollamudi S. Kishore, Ph.D	Art Unit 1615	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 April 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-6,8,10,11,13-15,17 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,8,10,11,13-15,17 and 19-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The amendment dated 4-11-07 is acknowledged.

Claims included in the prosecution are 1-2, 4-6, 8, 10-11, 13-15, 17 and 19-23.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-6, 8, 10-11, 13-15, 17 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al (5,954,998) in view of Disher (Science, 1999) or vice versa; that is, Disher in view of Zhou.

Zhou et al disclose detergent vesicular preparations prepared from diblock copolymers of propylene oxide and ethylene oxide (Pluronic). The vesicular preparations further contain surfactants and enzymes (abstract, col. 12, line 7-55; col. 16, lines 25-30 and Examples). Zhou et al do not specifically teach that the vesicles are made entirely from Pluronic and their examples indicate the use of vesicles prepared from novasomes, which contain only 20 % non-ionic surfactant and the rest lipids.

Disher teaches that amphiphilic diblock polymers (polyethylene oxide-polyethylethylene) like phospholipids when dispersed in water self-assemble into

lamellar structures (vesicles) and the vesicles thus formed are tough vesicles and are useful for encapsulation (abstract and page 1145).

It would have been obvious to one of ordinary skill in the art to use vesicles made entirely from Pluronic which is an amphiphilic diblock polymer in the detergent compositions of Zhou et al since Discher teaches that such vesicles are tough; it would Alternately, to use Discher's vesicles made entirely from diblock polymers in the detergent vesicular compositions of Zhou et al would have been obvious to one of ordinary skill in the art since Zhou et al show that such compositions can be used to encapsulate enzymes in laundry preparations.

Applicant's arguments have been fully considered, but are not found to be persuasive. Applicant argues that while Zhou may mention using preparations that contain enzyme and vesicles, but Zhou is devoid of any suggestion or instruction on how to provide enzyme encapsulated in a vesicle. This argument is not persuasive since liposomes are known carriers for a variety of active agents including enzymes for a number of years and one of ordinary skill in the art would possess the skill to encapsulate the enzymes just like any other active agent. The examiner cites US 5,190,762, 5,700,482 and 5,017,501 in this context. With regard to applicant's arguments that Zhou does not teach unilamellar or multilamellar vesicles, the examiner points out to col. 20, line 64, which clearly states that the vesicles are unilamellar. Applicant argues that Discher fails to cure the deficiencies of Zhou. According to Discher fails to teach or suggest a method that employs encapsulating an enzyme in a unilamellar or multilamellar vesicle. This argument is not persuasive since Discher is

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clearly suggestive of encapsulation of active agents in the vesicles (page 1145, col. 3).

The examiner disagrees with applicant's arguments that if one were to combine Zhou and Discher, one is just as likely to arrive at a combination of Zhou and Discher compositions having enzyme dispersed outside any vesicle than the applicants claimed invention because Discher is suggestive of encapsulation based on the tough nature of the vesicles. Therefore, one of ordinary skill in the art would encapsulate the enzymes in Zhou to protect them from degradation. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the prior art of the US references cited above clearly establishes the knowledge in the art to encapsulating enzymes. On this basis, applicant's arguments that the use of the word 'might' suggest that Discher is limited to offering transport, rheology or encapsulation modifications as a field for future experimentation are not persuasive. With regard to applicant's arguments that Discher provides no direction as to which of the many possible choices are likely to be successful are not persuasive since instant claims are composition claims and do not recite any of the parameters which applicant claims that Discher does not provide direction.

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3. Claims 1-2, 4-6, 8, 10-11, 13-15, 17 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al (5,954,998) in view of Disher (Science, 1999) or vice versa; that is, Disher in view of Zhou as set forth above, further in view of WO 97/24177 of record.

The teachings of Zhou et al and Disher have been discussed above.

WO 97 teaches liquid detergent compositions containing non-ionic block copolymers such as ethylene oxide-propylene oxide and encapsulating enzymes. The amount of this polymer is between 1-50 %. (abstract, page 19, lines 13-32 and pages 44-48. One of ordinary skill in the art would be motivated further to use the tough vesicular preparations made from the diblock polymers since WO 97, which also shows the use of these polymers in the same laundry detergent compositions, but not in vesicular form.

Applicant's arguments have been fully considered, but are not found to be persuasive. The examiner has already addressed applicant's arguments regarding Zhou and Discher. Applicant once again argues that WO discloses an encapsulation shell for an enzyme core, which is formed by in situ coacervation or condensation of a monomeric or polymeric agent, and the encapsulating layer resulting from the coacervation or condensation reaction is a randomly cross-linked structure and not a unilamellar or multilamellar vesicular structure. This argument is not found to be persuasive since this reference is suggestive of stability to detergents as well as permeability (due to osmosis) the block polymers provide even in non-vesicular systems and therefore, one of ordinary skill in the art would expect more stability and

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permeability of the vesicular systems of Disher and would be motivated to use these in the teachings of Zhou. Furthermore, WO teaches on page 16 that non-ionic block copolymers such as ethylene oxide-propylene oxide condensates are stabilizers.

**4. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gollamudi S. Kishore, Ph.D whose telephone number is (571) 272-0598. The examiner can normally be reached on 6:30 AM- 4 PM, alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Woodward Michael can be reached on (571) 272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Gollamudi S Kishore, Ph.D  
Primary Examiner  
Art Unit 1615

GSK